Extreme Imaging

Completed Technology Project (2016 - 2017)

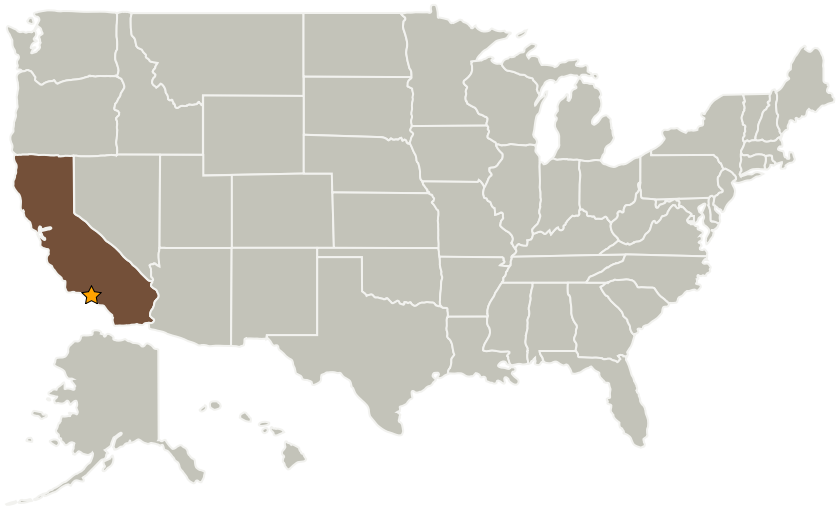
Project Introduction

Sandia will provide, at no cost to JPL, detector wafers that have been bonded to custom CMOS ROICs. JPL will use MBE and ALD to create nanoengineered surfaces that improve sensitivity and stabilize/isolate the detectors against radiation-induced surface damage. This program will produce superlattice-doped photodiodes and imaging arrays for integration and test in Sandia's Z-pinch facility.

Anticipated Benefits

JPL and Sandia will collaborate on the development and demonstration of imaging detectors with 1 ns frame rates. Using a pulse-dilation camera, we expect to achieve timing resolution better than 10 ps.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Sandia National Laboratories(SNL)	Supporting Organization	R&D Center	Albuquerque, New Mexico

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Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Center Innovation Fund: JPL CIF

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Primary U.S. Work Locations

California

Project Management

Program Director:

Michael R Lapointe

Program Manager:

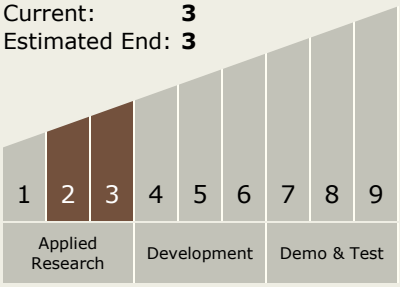
Fred Y Hadaegh

Principal Investigator:

Michael E Hoenk

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destination

Earth